

COMP 5120/6120 Database Systems I

Term Project: Populating and Querying Databases with SQL

Fall 2022

Due: 11:50pm, Dec. 8, 2022

1. Project Description

In this project, you are to create a database for a hypothetical online bookstore system. The system maintains information about books, subjects, supplier, and shippers. The bookstore acquires the desired books from suppliers (e.g. Amazon.com), and ships the books by shippers (e.g. UPS). The system also keeps track of orders, customers, and employees.

Your tasks are the following:

1. Create and populate the bookstore database with MySQL.
2. Create a user interface using PHP and HTML to query and modify the data.
3. Write correct SQL statements for the queries given.

2. Access to PHP and MySQL

All Auburn students have a personal space on the university web server (Mallard), which has PHP support. You will need to upload your project PHP files to the web server for the grader to access them. For more information about accessing the web space, visit OIT website http://www.auburn.edu/oit/web_development/.

Students may request to have a database created on MySQL server maintained by OIT. Details are found at <https://cws.auburn.edu/oit/database/mysql/Create> .

3. Populating the Database (20 points)

Create the following tables for the bookstore database and populate the database from the **data.zip**. You may optionally first create your user interface and populate the database through your interface.

4. Interface Implementation (30 points)

Implement an interface by using PHP and HTML. A simple example is as shown in the following figure, which includes a text box to accept a SQL statement and then submit it to the MySQL database.

Please input SQL Statement here

Interface Requirements:

1. Your interface should **not** accept SQL DROP statements.
2. For any other SQL statements, your interface should not only accept it, but also return the execution result. For example, a select statement will return the query results (including the attribute name for each column) and **the number of rows retrieved**. A create/delete/update/insert statement will display "Table Created/Updated", "Row Inserted" or "Row(s) Deleted" messages on your interface.
3. An error message should be displayed if an incorrect SQL statement was submitted.
4. You should also have a title for this interface, indicating your name.

5. Execution of SQL queries (50 points)

First, you need to write the SQL statements for the following queries. Then, you submit each of them through your interface to get the correct result.

1. Show the subject names of books supplied by *supplier2*.
2. Show the name and price of the most expensive book supplied by *supplier3*.
3. Show the unique names of all books ordered by *lastname1
firstname1*.
4. Show the title of books which have more than 10 units in stock.
5. Show the total price *lastname1 firstname1* has paid for the books.
6. Show the names of the customers who have paid less than \$80 in totals.
7. Show the name of books supplied by *supplier2*.
8. Show the total price each customer paid and their names. List the result in descending price.

9. Show the names of all the books shipped on 08/04/2014 and their shippers' names.
10. Show the unique names of all the books *lastname1 firstname1* and *lastname4 firstname4* *both* ordered.
11. Show the names of all the books *lastname6 firstname6* was responsible for.
12. Show the names of all the ordered books and their total quantities. List the result in ascending quantity.
13. Show the names of the customers who ordered at least 2 books.
14. Show the name of the customers who have ordered at least a book in *category3* or *category4* and the book names.
15. Show the name of the customer who has ordered at least one book written by *author1*.
16. Show the name and total sale (price of orders) of each employee.
17. Show the book names and their respective quantities for open orders (the orders which have not been shipped) at midnight 08/04/2016.
18. Show the names of customers who have ordered more than 1 book and the corresponding quantities. List the result in the descending quantity.
19. Show the names of customers who have ordered more than 3 books and their respective telephone numbers.

6. Materials to Hand In

Please submit the following in a zip file named **YourAuburnUsername.zip** to canvas with the subject **COMP5120/6120 Term Project** by deadline.

1. URL of your PHP/HTML interface in a file named **url.txt**. Please make sure the interface can be used to query the database. The TA will use the interface to verify that the database has been populated with correct schema and data.
2. Your code organized in **src/** folder for implementing the interface.
3. The SQL statements to create and populate your tables in **sql.txt**. Please have queries numbered and in the same order as queries given.